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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,001	03/09/2001	Edison T. Hudson	META-007	6225

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EXAMINER

HARTMAN JR, RONALD D

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/803,001

Applicant(s)

HUDSON ET AL.

Examiner

Ronald D Hartman Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) 18-21, 39, 40, 57-60 and 62-69 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 22-38, 41-45, 49-53 and 61 is/are rejected.
- 7) ☒ Claim(s) 47, 48, 55 and 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-69 are presented for examination.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Consisting of claims 1-17, 22-38, 41-56 and 61, directed towards a generic control method, classified in class 700, subclass 1 and 20, for one and two actuators, respectively.

- II. Consisting of claims 18-19 and 39-40, directed towards a method of detecting errors and interrupting the controlling of plural actuators, classified in class 700, subclass 79.

- III. Consisting of claims 20-21, directed towards the specific hardware of a smart camera module, classified in class 396, subclass 439.

- IV. Consisting of claims 57-60, directed towards a method of synchronizing communications between a camera and a host computer, classified in class 340, subclass 10.

- V. Consisting of claims 62-65, directed towards a generic monitoring method for a camera, classified in class 702, subclass 188.

- VI. Consisting of claims 66-69, directed towards a generic imaging system, classified in class 358, subclass 158.

Groups I-VI are considered to be subcombinations disclosed as useable together in the same or single combination.

That is, group I does not require the use of two error current blocks for interrupting signals during operation of the actuators, as disclosed in group II, the specific hardware of a smart camera module, as disclosed by group III, utilizing an isochronous transfer mode for

linking a computer to a camera for status updating, as disclosed in group IV, periodically monitoring the camera, as disclosed in group V, and synchronizing an event to an image, as disclosed in group VI.

Furthermore, group II does not require controlling the camera based on the images received by the camera, as disclosed in group I, the specific hardware of a smart camera module, as disclosed by group III, utilizing an isochronous transfer mode for linking a computer to a camera for status updating, as disclosed in group IV, periodically monitoring the camera, as disclosed in group V and synchronizing an event to an image, as disclosed in group VI.

Furthermore, group III does not require controlling the camera based on the images received by the camera, as disclosed in group I, the use of two error current blocks for interrupting signals during operation of the actuators, as disclosed in group II, utilizing an isochronous transfer mode for linking a computer to a camera for status updating, as disclosed in group IV, periodically monitoring the camera, as disclosed in group V and synchronizing an event to an image, as disclosed in group VI.

Furthermore, group IV does not require controlling the camera based on the images received by the camera, as disclosed in group I, the use of two error current blocks for interrupting signals during operation of the actuators, as disclosed in group II, the specific hardware of a smart camera module, as disclosed by group III, periodically monitoring the camera, as disclosed in group V and synchronizing an event to an image, as disclosed in group VI.

Furthermore, group V does not require controlling the camera based on the images received by the camera, as disclosed in group I, the use of two error current blocks for interrupting signals during operation of the actuators, as disclosed in group II, the specific hardware of a smart camera module, as disclosed by group III, utilizing an isochronous transfer mode for linking a computer to a camera for status updating, as disclosed in group IV and synchronizing an event to an image, as disclosed in group VI.

Furthermore, group VI does not require controlling the camera based on the images received by the camera, as disclosed in group I, the use of two error current blocks for interrupting signals during operation of the actuators, as disclosed in group II, the specific hardware of a smart camera module, as disclosed by group III, utilizing an isochronous

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transfer mode for linking a computer to a camera for status updating, as disclosed in group IV and periodically monitoring the camera, as disclosed in group V.

A telephone call was placed to Kirk Hudson on August 10, 2004 to request an oral election to the restriction requirement below, and Mr. Hudson provisionally elected, with traverse, group I. During this telephone conversation, the grouping of the claims for Group I was misidentified. The current grouping of the claims is correct as listed above.

Therefore, since Group I was provisionally elected with traverse, claims 18-21, 39-40, 57-60 and 62-69 are withdrawn from consideration and an action on the merits of claims 1-17, 22-38, 41-56 and 61 appears below.

Priority

5. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

However, the provisional applications, U.S. Application Number 60/188,562 and 60/188,580, upon which priority is claimed, both fail to provide adequate support under 35 U.S.C. 112 for claims 1-17, 22-38, 41-56 and 61 of this application. That is, the specification does not adequately set forth the claimed method for controlling specifically one and two actuators by sending programs to respective control modules, one controlling a first actuator, and the other, a smart camera control module, controlling the second actuator. Therefore, the effective U.S. filing date of the instant application is believed to be the actual U.S. filing date of the instant application, 3/9/2001.

Specification

6. The specification is objected to because the specification does not adequately set forth the claimed invention claimed by way of pending claims 1-17, 22-38, 41-56 and 61. That is, the specification does not adequately set forth the claimed method for controlling one and two actuators, respectively, by sending programs to respective control modules, one which controls a first actuator, and the other being a smart camera control module which controls the second actuator.

Claim Objections

7. Claim 2 is objected to because it refers to "the control module" in line 2 and there is no "control module" in claim 1, only a smart camera module and therefore the claimed "control module" is interpreted to be the same as the camera control module.

Claims 43 and 51 are objected to because the examiner is unsure as to how a real time clock can cause the issuance of a read request when it seems that this is usually accomplished by using a CPU or microprocessor, in conjunction with a clock.

Claims 45 and 53 are objected to because the examiner is unsure as to what is exactly meant by "a complete set of desired control states" since one of ordinary skill in the art would not necessarily know what is meant by "complete" and therefore one of ordinary skill in the art would not know how to use the claimed invention. The examiner has interpreted this feature, in light of the applicant disclosure, specifically [0024] wherein the applicant discloses that the in-page data blocks are representative of information in the camera itself, contained in a manner such as through use of table, and the out-page data blocks are representative of the current state of the values contained in the table.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-17, 22-38, 41-45, 49-53 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, U.S. Patent No. 6,498,598, in view of DeCarlo, U.S. Patent No. 5,903,662.

As per claims 1, 22, 41 and 49, Watanabe teaches a method comprising:

- storing a program of instructions on a host computer (i.e. camera setting parameters, Figure 1 element 113, being stored on a hard disk, Figure 1 element 114; C23 L32-36);

- linking (i.e. via cable, Figure 1 element 108) the host computer to a smart camera module (Examiner's Note: "smart" of a "smart camera module" has been interpreted to mean a camera that possesses the ability or capability to process images by circuitry resident to the camera itself and this feature is adequately contemplated by Watanabe's teaching of a signal processing unit, Figure 1 element 102, or the use of a digital output using the Digital I/F, Figure 1 element 105);
- coupling the smart camera module to the actuator (Examiner's Note: "actuator" is interpreted as per Merriam Webster's dictionary, 10th Edition, which states that an actuator is a mechanical device for moving or controlling something, in this case the "something" is the camera itself; See camera control parameter, Figure 1 element 104 and the "actuator" is the control unit of the camera, Figure 1 element 103, which performs lens control); and
- retrieving the program of instructions from the host computer and loading it into the smart camera module (i.e. transferring a control program or procedure for operating the camera, to the camera, from the host computer; Figure 1 and C23 L23-64).

As per claims 1, 22, 41 and 49, although Watanabe teaches the programming of a camera for allowing the camera to perform lens control (i.e. C23 L6-21), Watanabe is silent with respect to the lens control being in accordance with obtained images, obtained using the camera during its actual operation.

DeCarlo teaches an image processor that allows for image data to determine control signals, which are issued in response to the obtained image data, the control signals being transmitted to the camera so that the operation of the camera is affected by the control signals (i.e. Figure 1, the communications diagrammed between elements 48 and 50 using image data and control signals).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of DeCarlo into the teachings of Watanabe for the purpose of allowing the camera to perform automatic processing functions, such as lens control, which are based on the images received by the actual camera itself and program/control information which is stored in the camera. That is, the incorporation of the aforementioned features would allow the camera controls taught by Watanabe to be utilized and incorporated into an image processing system, as taught by DeCarlo, and this

incorporation would allow for more efficient control of the image processing system since functions relating to the actual operation of the camera lens may be more effectively controlled based on the needs, or images outputted, by the system, without needing an external computer to analyze the particular images obtained by the camera.

As per claims 5, 10, 26 and 31, the rejection of claim 1 is applied equally herein.

Furthermore, Watanabe's combined system teaches the use of a first and second actuator, wherein the first actuator has been interpreted to be resident to the camera itself, and the first actuator being the head position control, wherein both actuators receive control signals based on the image data which is received and processed by an image processor (i.e. Figure 1 elements 40 and 48).

As per claims 2, 6-7, 14-15, 23, 27-28 and 35-36, although Watanabe's combined system does not specifically teach retrieving the programs being performed immediately after power is applied to the smart camera module, it is a feature that would have been obvious to one of ordinary skill in the art at the time the invention was made since the purpose of Watanabe's combined system is to provide the ability to operate a camera effectively by allowing for changes to the camera that affect the overall operations and quality of images received by the camera, and therefore a feature that utilizes programming after power has been applied would be obvious since the system cannot be programmed at any time before power is applied, and therefore if the system is to perform correctly, the camera should be programmed as soon as physically possible, from the time it is brought online, and therefore the feature of programming the camera after power has been applied to the camera is a feature that the combined system of Watanabe is capable of performing, and this capability would have been obvious to one of ordinary skill in the art at the time the invention was made in order to form a reliable and effective imaging system.

As per claims 16-17 and 37-38, Watanabe teaches the use of a unique identification number associated with each device connected to the IEEE 1394 network of devices (i.e. C2 L50-59).

As per claims 41 and 49, Watanabe further teaches the camera sending state information reflecting a state of the smart camera module from the smart camera module to the host computer repeatedly at fixed time intervals and storing the state information in memory of the host computer between said fixed time intervals (i.e. C11 L29-41 and C14 L9-21 and C15 L6-11).

As per claims 3-4, 8-9, 11-13, 24-25, 29-30, 32-34 and 61, Watanabe teaches linking being performed with a high-speed serial bus implemented over a flexible cable, wherein the high-speed serial bus is an IEEE 1394 bus (i.e. Figure 1, element 108).

Furthermore, as per claims 12, 33 and 61, Watanabe teaches the use of a hub (i.e. Figure 7 element "Device A" and Figures 13A and 13B element "Root").

As per claims 42 and 50, Watanabe teaches the use of an IEEE 1394 connection as well as isochronous communication transfers (i.e. C3 L6-12 and C11 L28-41).

As per claims 43 and 51, Watanabe teaches the use of a clock (i.e. transmitting information every 125 μ s; C11 L42).

As per claims 44 and 52, Watanabe's combined system provides for the capability of sending and storing information without the permission from, redirection from or routing by the host computer as this is the very nature and desire of using an IEEE 1394 communications medium between a plurality of devices, that is, to allow for configuration and communications without the need for an external computer instructing the devices how to start a configuration of themselves, in this instance the themselves being representative of a camera in an imaging system, and this would have been obvious to one of ordinary skill in the art at the time the invention was made.

As per claims 45 and 53, Watanabe teaches maintaining current values for operations relating to the control of the camera, and storing these values in the memory itself and that when a change occurs to one of the parameters, via an instruction issued from the host computer, the values are changed accordingly and the new values are stored in the place of

the old ones (i.e. using the memory of the camera for storing parameter values and changes thereof, Figure 1 element 104).

10. Claims 46 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe's combined system (Watanabe in view of DeCarlo, as applied to claims 1, 22, 41 and 49), and in further view of Kawakami et al., U.S. Patent No. 5,535,208.

As per claims 46 and 54, Watanabe's combined system does not specifically disclose checking for errors twice during a communications interval.

Kawakami et al. teaches that each isochronous packet includes a 4-byte header CRC for checking for transmission errors in the packet header and a 4-byte data CRC for checking for transmission errors in the real-time data (i.e. Figure 3, elements 302 and 304).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Kawakami et al. into the teachings of Watanabe's combined system for the purpose of allowing for more than one error check to occur, thereby improving the reliability of the information received to and from the camera and host computer, and this would have been obvious to one of ordinary skill in the art at the time the invention was made since both Kawakami et al. and Watanabe's combined system are directed towards utilizing isochronous communications.

Allowable Subject Matter

11. Claims 47-48 and 55-56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per claims 47-48 and 55-56, specifically dependent claims 47 and 55, the prior art of record fails to teach or adequately suggest a method for controlling an actuator wherein the at least two error checks include a checksum on data integrity of the in-page data block and the out-page data block and a recirculating message sequence number used to verify message order integrity, in combination with the other claimed features and or limitations as claimed by the claimed invention.

Information Disclosure Statement

12. It is noted that the applicant's submission of Prior Art, specifically papers No. 6, 8 and 10, were not located by the examiner at the time of this office action. Therefore, none of the references listed therein have been considered and the applicant is kindly asked to resubmit any and all Non Patent Literature that the applicant wishes the examiner to consider. The applicant also should resubmit the appropriate PTO 1449 forms including any and all references the applicant would like the examiner to consider and the examiner apologizes for any inconvenience this may cause. It is noted that the applicant does not need to submit actual copies of Patents as they are readily available to the examiner.

Drawings

13. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because elements and element notations are hand written. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald D Hartman Jr. whose telephone number is 703-308-7001, and after October 12, 2004, (571) 272 - 3684. The examiner can normally be reached on Mon. - Fri., 11:30 am - 8:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703-308-3179, and starting October 12, 2004, at (571) 272 - 3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

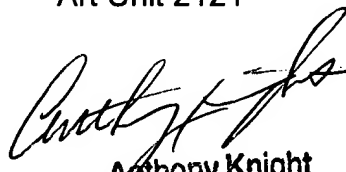
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Ronald D Hartman Jr.

Examiner

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A handwritten signature in black ink, appearing to read 'Anthony Knight', is written over the printed name.

Anthony Knight
Supervisory Patent Examiner
Group 3600